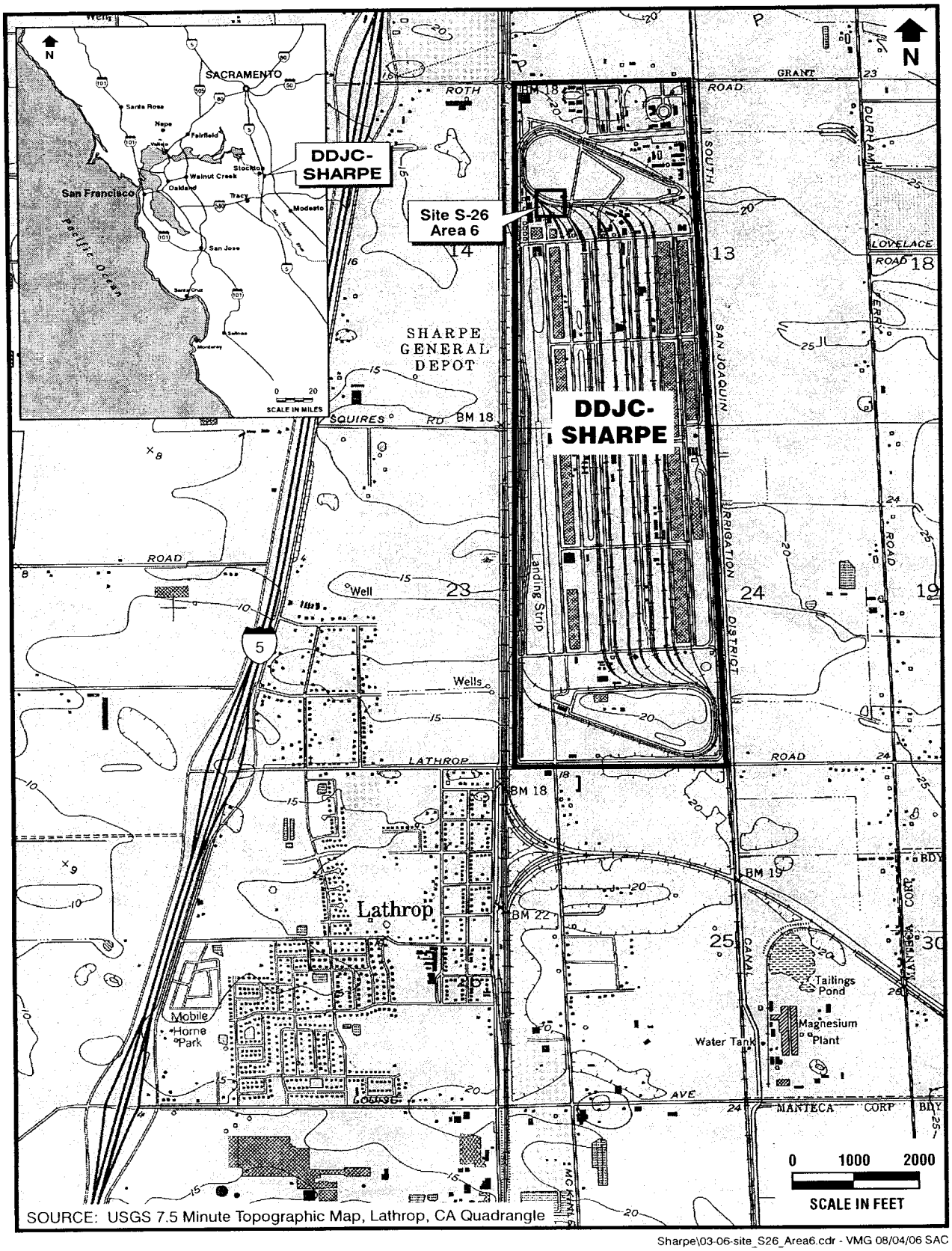
1.0 INTRODUCTION

This remedial action (RA) work plan presents the design analysis, technical approach, field procedures, and quality control procedures to be followed during the RA to remove lead-contaminated soil at Site S-26, Area 6, in Operable Unit (OU) 2 at Defense Distribution Depot San Joaquin California (DDJC)–Sharpe (shown on Figure 1-1). This work plan and design are intended to be used in conjunction with the OU 2 Record of Decision (ROD) (ESE, 1996), the *DDJC-Sharpe/Tracy Comprehensive Field Work Plan* (URS Group, Inc., 2004), the *Program Management and Quality Control Plan* (URS Group, Inc., 2005a), and the *DDJC-Sharpe/Tracy Quality Assurance Project Plan* (QAPP) (URS Group, Inc., 2005b), which have been approved by the regulatory agencies. The procedures in these documents are followed by URS when conducting work at DDJC–Sharpe.

1.1 Work Plan Organization

This RA Work Plan is organized as follows:

- The remainder of Section 1.0 defines the project background, scope and objectives, RA work plan and design objectives, project organization, and project implementation schedule.
- Section 2.0 presents the design analysis for the Site S-26, Area 6, RA.
- Section 3.0 describes the project requirements for the Site S-26, Area 6, RA, including pre-mobilization activities and coordination, site security considerations, on-site field activities, off-site transportation and disposal, site restoration, and the RA/Site Closure Report.
- Section 4.0 presents the sampling and analysis plan to characterize excavated soil for disposal and to confirm that cleanup levels have been achieved at Area 6. Section 4.0 also presents the decision logic for determining the proper disposal actions for excavated soils.
- Section 5.0 presents the Environmental Protection Plan.
- Section 6.0 presents the Transportation and Spill Response Plan.
- Section 7.0 presents the Soil/Waste Disposal Plan.
- Section 8.0 presents the Contractor Quality Control Plan.
- Section 9.0 lists the references used in preparing this document.
- Appendix A, Design Drawings, provide details of the site location, site access, the proposed excavation and confirmation sample locations, and proposed work zones.
- Appendix B, Specifications, provides instructions and requirements to be used by the RA contractor to complete the remedial action.
- Appendix C presents the health and safety (H&S) considerations and includes the Health and Safety Plan.



SOURCE: USGS 7.5 Minute Topographic Map, Lathrop, CA Quadrangle

Sharpe\03-06-site_S26_Area6.cdr - VMG 08/04/06 SAC

Figure 1-1. Site Location, DDJC-Sharpe, California

1.2 Background

In February 1996, officials from the U.S. Defense Logistics Agency (DLA), the U.S. Environmental Protection Agency, Region 9 (EPA), and the State of California Department of Toxic Substances Control (DTSC) and Central Valley Regional Water Quality Control Board (RWQCB) signed a Basewide ROD specifying the remedy for OU 2 at DDJC-Sharpe (ESE, 1996) (OU 2 ROD). The OU 2 ROD addresses the comprehensive cleanup of the vadose zone, including the excavation and off-site disposal of soils contaminated with lead and chromium.

1.2.1 OU 2 ROD Requirements

The OU 2 ROD remedy for lead- and chromium-contaminated soils specifies the following activities.

- Collect additional samples to delineate soils contaminated with lead or chromium at levels exceeding the following cleanup standards.
  - Total lead (Pb) above 1,000 milligrams per kilogram (mg/kg). (The total lead cleanup standard was later reduced to 800 mg/kg at the remedial program managers (RPM) meeting in November 2005.)
  - Total chromium (Cr) above 300 mg/kg.
- Remove existing pavement, concrete, and light brush at locations with soils contaminated with lead and chromium at levels exceeding cleanup standards.
- Excavate soils that exceed cleanup standards.
- Analyze excavated soils to determine whether any soils are hazardous by toxicity characteristic.
- If any portion of soils is determined to be hazardous by toxicity characteristic, transport the soils to an appropriately permitted Class I landfill. Soils that are not found to be hazardous will be disposed of as construction debris in an appropriately permitted Class II landfill.
- Complete confirmation sampling to ensure that soils with lead and chromium concentrations exceeding cleanup standards have been removed within 2 feet of the existing ground surface.
- As a part of confirmation sampling, perform soil sampling using the deionized water waste extraction test (DI-WET) to determine the levels of soluble metals left in place and to evaluate the impact or threat of impact to groundwater from the residual lead and chromium in the vadose zone.
- If the DI-WET analysis reports samples with lead at concentrations greater than 150 micrograms per liter (µg/L) and/or chromium at concentrations greater than 50 µg/L, then DDJC-Sharpe will perform an attenuation study.
- If the soils attenuation study shows the residual soil concentrations threaten to impact water quality above the maximum contaminant levels (MCLs), then DDJC-Sharpe, EPA, DTSC, and the Central Valley RWQCB will determine the need for any additional characterization or remedial actions and modify the OU 2 ROD accordingly.
- Return the site to the existing grade by backfilling the excavation with clean fill.

1.2.2 Confirmation of Metal-Impacted Sites

The OU 2 ROD identified five solid waste management units (SWMUs) exceeding the cleanup standard of 1,000 mg/kg for total lead and/or 300 mg/kg for total chromium. An additional sampling effort to further define the excavation areas and volume of soils contaminated with lead and chromium was completed in July 1996 and is described in the *Operable Unit 2 Pre-Design Technical Summary* (Radian International, 1997a). This sampling revealed that three of the SWMUs did not require excavation, based on the cleanup standards outlined in the OU 2 ROD. However, the need for excavation to remove soils above the cleanup standards was confirmed in two SWMUs, Sites S-3 and S-26. Six areas that required excavation were delineated within Site S-26.

1.2.3 Previous Remedial Actions in OU 2

In 1998, remedial actions were conducted at Site S-3 and at five of the six areas of Site S-26 (Areas 1 through 5) described in the *Operable Unit 2 Metals Remedial Action Report, Sites S-3 and S-26* (Radian International, 2000). Metal-contaminated soil was not removed at Area 6 for the following reasons.

- The impact to human health was considered minimal, given the presence of railroad ballast over the contaminated area, which acted as a cover, preventing wind erosion.
- No threat of impact to groundwater existed from soluble lead or chromium, based on a DI-WET analysis performed on a soil sample from the site.
- The cost to remove and replace the railroad tracks in this area made it cost prohibitive. The cost per unit of soil to be removed from this area would have been three times higher than the cost for soil removal from the other areas of Sites S-26.

1.2.4 Site S-26, Area 6, Status

The deferred remedial action at Site S-26, Area 6, was documented and approved by EPA in the *Operable Unit 2 Metals Remedial Action Report, Sites S-3 and S-26, Final* (Radian International, 2000). The site remains undisturbed, and the area of contamination remains in place. In 2005, to achieve closure in OU 2, DDJC-Sharpe decided to complete the remedial action at Site S-26, Area 6, in accordance with the requirements in the OU 2 ROD, with the exception of using an updated cleanup level for lead. The updated lead cleanup level of 800 mg/kg was agreed upon by DDJC-Sharpe and the regulatory agencies at the November 2005 RPM meeting. This cleanup level is based on the October 2004 EPA Industrial Preliminary Remediation Goal (PRG) for lead (EPA, 2004). All other applicable and relevant and appropriate requirements (ARARs) presented in the OU 2 ROD will be followed. Based on the *Operable Unit 2 Metals Remedial Action Report, Sites S-3 and S-26* (Radian International, 2000), lead-contaminated soil remains in an area of approximately 1,170 square feet (sf) at Site S-26, Area 6. The depth of contamination is estimated to extend to approximately 2 feet below ground surface (bgs).

1.3 Project Scope and Objectives

The scope and objectives of this project are to prepare an RA work plan to complete the RA for site S-26, Area 6, using the most economical method to achieve site closure, and to document the RA activities in an RA Report. URS will conduct all work in accordance with the requirements established in the OU 2 ROD. The objectives of the RA work plan and design are described hereafter.

1.3.1 Design Objectives

1.3.1.1 The design included in Section 2.0 of this work plan is based on the preferred RA alternatives and ARARs presented in the OU 2 ROD. The following design goals were developed to ensure that the remedial actions presented in the OU 2 ROD are met:

- Produce drawings and specifications that, upon implementation of the design, will ensure the removal of soils with concentrations of lead and chromium exceeding the cleanup standards;
- Develop an implementable and cost-effective design; and
- Develop data quality objectives to ensure quality of analytical results.

1.3.1.2 To meet these design goals, the design included with this work plan includes the following components:

- The design analysis;
- Delineation of the horizontal and vertical extents of the soil excavation required to remove all soils containing constituents known to exceed cleanup standards;
- Design drawings showing the area of excavation and existing site features; and
- A set of specifications detailing the level of effort necessary to implement the design.

1.3.1.3 The draft design included in this RA work plan will be reviewed by DDJC-FA, EPA, the RWQCB, DTSC, and the Air Force Center for Environmental Excellence (AFCEE). The final design will be included with the final RA work plan and will incorporate the responses to comments provided by the agencies.

1.3.2 RA Work Plan Objectives

1.3.2.1 The RA work plan objectives are to describe the technical approach (strategy) and activities for implementing the soil excavation remedial action at Site S-26, Area 6. The strategy and activities are consistent with the requirements set forth in the OU 2 ROD and are described in detail in Section 3.0 of this work plan. Planned activities include the following:

- Pre-mobilization activities and coordination – permits and notification;
- Site security;
- Mobilization;
- Removal of railroad track and ties above the excavation area;
- Utility survey;
- Excavation of railroad ballast and metal-contaminated soil;
- Sampling and analysis of excavated soil for characterization and disposal;

- Confirmation sampling and analysis within the excavation to ensure cleanup levels are achieved;
- Excavation and confirmation sample location survey;
- Stockpile management;
- Transportation and disposal to Class I and Class II waste disposal facilities (as needed);
- Decontamination activities/facility plan;
- Site restoration, including sampling prospective backfill materials to ensure they are appropriate for use, importing clean backfill materials (as needed), backfilling and grading, compacting, and geophysical testing;
- Demobilization; and
- Preparation of the RA Report.

1.3.2.2 The work plan also contains guidance and procedures to ensure the safe and successful implementation of the RA, and it addresses health and safety considerations, environmental control, off-site soil transportation and disposal, and construction QC.

1.3.2.3 Restoration of the railroad tracks is **not** an objective of this RA. Railroad ballast, rail ties, and railroad tracks **will not** be reinstalled.

1.4 Project Organization

The project organization is shown on Figure 1-2.

1.5 Project Implementation Schedule

The project implementation schedule is shown on Figure 1-3. The actual date for mobilization to the field will be determined following review and approval of the work plan. The project schedule does not include any downtime for inclement weather or additional time that may be required for additional excavation, based on confirmation sampling.